Claims

What is claimed is:

1. A method of performing chromatography with a chromatographic bed having a stationary phase, comprising the steps of:

positioning the chromatographic bed and the stationary phase within a sealed cavity;

placing the stationary phase in contact with a liquid mobile phase while the stationary phase is positioned within the sealed cavity;

advancing a fluid into the sealed cavity so that pressure within the sealed cavity is greater than the pressure outside of the sealed cavity;

placing a first electrode in contact with the liquid mobile phase;

placing a second electrode in contact with the chromatographic bed; and

creating an electrical potential between the first electrode and the second electrode so as to cause the liquid mobile phase to be advanced through the chromatographic bed positioned within the sealed cavity.

2. The method of claim 1, wherein:

said first electrode includes an anode, and

said second electrode includes a cathode.

3. The method of claim 1, wherein:

the advancing step includes the step of placing a bladder having a void defined therein within the sealed cavity and advancing the fluid into the void so that the bladder is urged against the stationary phase.

4. The method of claim 3, wherein:

the fluid advanced into the void of the bladder includes a liquid, and

creating the electrical potential step includes the step of placing the liquid in a heat exchange relationship with the stationary phase so that the liquid cools the stationary phase.

5. The method of claim 2, wherein:

the stationary phase includes a thin layer chromatography plate having a cathode portion and an anode portion,

the mobile phase includes a liquid,

the anode portion of the thin layer chromatography plate is in contact with the liquid when the stationary phase is located within the sealed cavity,

the cathode is in contact with the cathode portion of the thin layer chromatography plate,

the anode is in contact with the liquid of the mobile phase, and

creating an electrical potential between the cathode and the anode causes the liquid of the mobile phase to migrate through the chromatographic bed in a direction away from the anode portion and toward the cathode portion.

6. The method of claim 5, wherein:

the cathode includes a platinum wire attached to a piece of platinum foil, and

the platinum foil is positioned in contact with the cathode portion of the thin layer chromatography plate.

7. The method of claim 1, further comprising the step of:

positioning an absorbing element in contact with said stationary phase so that the absorbing element absorbs the liquid when the electrical potential is created between the first electrode and the second electrode.

8. A method of performing chromatography, comprising:

(a) exerting a pressure which is greater than atmospheric pressure against a stationary phase which is supported by a plate;

(b) placing the stationary phase in contact with a liquid mobile phase; and

(c) creating an electrical potential across the stationary phase with a first electrode and a second electrode so as to cause the liquid mobile phase to be advanced across the stationary phase.

9. The method of claim 8, further comprising:

(a) placing the stationary phase in thermal communication with a cooling device; and

(b) cooling the stationary phase with the cooling device.

10. A method of performing chromatography, comprising:

(a) placing a stationary phase supported by a plate in contact with a liquid mobile phase;

(b) creating an electrical potential across the stationary phase with a first electrode and a second electrode so as to cause the liquid mobile phase to be advanced across the stationary phase; and

(c) cooling the stationary phase with a cooling device placed in thermal communication with the stationary phase as the liquid mobile phase is advanced across the stationary phase.

11. A method of performing chromatography, comprising:

(a) placing a stationary phase which is supported by a plate in contact with a liquid mobile phase;

(b) creating an electrical potential across the stationary phase with a first electrode and a second electrode so as to cause the liquid mobile phase to be advanced across the stationary phase; and

(c) maintaining the stationary phase within a predetermined temperature range with a temperature control device placed in thermal communication with the stationary phase as the liquid mobile phase is advanced across the stationary phase.

12. The method of claim 11, further comprising:

(a) exerting a pressure which is greater than atmospheric pressure against the stationary phase.